EXHIBIT B
PART 2

'873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid.

Also, as mentioned above, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". **A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64**. Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Moreover, Molitor '637 teaches a list of materials that may adapted for use in the invention:

> Homopolymeric and copolymeric substances, such as (1) vinyl resins formed by the polymerization of vinyl chloride or by the copolymerization of vinyl chloride with unsaturated polymerizable compounds, e.g., vinyl esters; (2) polyolefins such as polyethylene, polypropylene, polybutylene, transpolyisoprene, and the like, including copolymers of polyolefins; (3) polyurethanes such as are prepared from polyols and organic polyisocyanates; (4) polyamides such as polyhexamethylene; (5) polystyrene, high impact polystyrene, styrene acrylonitrile copolymer and ABS, which is acrylonitrile, butadiene styrene copolymer; (6) acrylic resins as exemplified by the copolymers of methylmethacrylate, acrylonitrile, and styrene, etc.; (7) thermoplastic rubbers such as the urethanes, copolymers of ethylene and propylene, and transpolyisoprene, block copolymers of styrene and cispolybutadiene, etc.; and (8) polyphenylene oxide resins, or a blend with high impact polystyrene known by the trade name "Noryl."

See Molitor '637, col. 5, ll. 33-50.

In addition, Nesbitt discloses its outer layer was made from SURLYN 1855 (now SURLYN 9020). This material had inherently flexural modulus of about 14,000 psi and a Shore hardness of 55, see Exhibit I "Typical Properties for Selected Grades of SURLYN". Moreover, as admitted by the inventor Sullivan of the '873 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves, see Exhibit G at 334.

Thus, because it appears that to one of ordinary skill in the art at the time the invention was created that the actual chemical composition of the material is not critical to the practice of the invention with respect to its mechanical performance, i.e. its "click and feel" for a golfer, one of ordinary skill in the art at the time the invention was made would find it obvious to substitute one material for another material if both materials had substantially the same mechanical properties.

This rejection of claim 5 based on Nesbitt in view of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Proposed Third Party Requester Rejection: Ground #30.

The requester submits on pages 54-56 in the request that claim 5 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Wu.

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Wu, as evidenced by Exhibit C.

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Wu discloses, teaches or suggests the claim limitations. As reported in the Decision of 04-06-06 granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials, which are non-ionomeric thermoset materials, for the use as an outer layer.

Claim 5	Nesbitt (primary) mentioning Molitor '637 with Wu (teaching)
A multi-layer golf ball comprising:	"The disclosure embraces **a golf ball** and method of making the same..." (Nesbitt, Abstract and FIGS. 1 & 2.)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or **core** form as a solid body of resilient polymeric material or rubber-like material in the shape of a **sphere**." (Nesbitt, col. 2, ll. 31-34.)
an inner cover layer having	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or **inner cover** 14 of molded hard, highly flexural modulus resinous material..." (Nesbitt, col. 2, ll. 34-37.)
a Shore D hardness of about 60 or more molded over said spherical core,	Nesbitt: "[I]nner cover 14 of **molded hard**, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont d Nemours." (Nesbitt, col. 2, ll. 36-38.) Per the '130 Patent: "Type 1605 SURLYN (now designated SURLYN 8940)." ('130 Patent, col. 2, ll. 46-47.) Exhibit I: SURLYN 8940 has a **Shore D hardness of 65**.
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	Nesbitt: "Reference is made to the application Ser. No. 155,658 of Robert P. **Molitor** issues into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for ... layer 14 ... for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: Molitor teaches, in examples 1-7, cover materials including a blend of two **ionomer resins**: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34.)

	See below for further explanation of how the % by weight and chemical composition limitations are taught.
and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer having	"An **outer** layer, ply, lamination or **cover** 16 ... is then remolded onto the inner ply or layer 14 ..." (Nesbitt, col. 2, ll. 43-47.) Wu: "Preferably, a golf ball is made in accordance with the present invention by molding a cover about a core wherein the cover is formed from a polyurethane composition comprising a polyurethane prepolymer and a slow-reacting polyamine curing agent or a difunctional glycol." (Wu, col. 3, ll. 62-66.)
a Shore D hardness of 64 or less	Nesbitt: "Reference is made to application Ser. No. 155,658 of Robert P. **Molitor** issued into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. ESTANE 58133 has a **Shore D hardness of 55**, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet) Wu: "With polyurethanes made in accordance with the present invention, the degree of cure which has taken place is dependent upon, *inter alia*, the time, temperature, type of curative, and amount of catalyst used. It has been found that the degree of cure of the cover composition is directly proportional to the hardness of the composition. A hardness of about 10D to 30D, Shore D hardness for the cover stock at the end of the intermediate curing step (i.e. just prior to the final molding step) has been found to be suitable for the present invention, More preferred is a hardness of about 12D to 20D." (Wu, col. 6, ll. 27-38.) See below for more explanation of how Wu teaches and/or suggests the Shore D hardness of 64 or less limitation

	explanation.
molded over said spherical intermediate ball to form a multi-layer golf ball	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner play or layer 14 ...." (Nesbitt, col. 2, lines 43-47.)
said outer cover layer comprising a polyurethane based material.	Exhibit J: ESTANE 58133 is a Polyester-Type **Thermoplastic Polyurethane** (TPU Compound) which is a non-ionomeric thermoplastic elastomer. Wu: "[t]he present invention is a golf ball product made from a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents or difunctional glycols. The term "golf ball product" as used in the specification and claims means a cover, a core, a center or a one-piece golf ball. The cover of a golf ball made in accordance with the present invention has been found to have good shear resistance, cut resistance, durability and resiliency. **Preferably, the polyurethane composition of the present invention is used to made the cover of a golf ball.**" (Wu, col. 2, ll. 33-44.)

As mentioned above, Nesbitt mentioning Molitor '637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that SURLYN covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. This teaching of Shore D hardness is directed to an intermediate curing step product prior to the final molding process to finish the golf ball. Exhibit C demonstrates the actual finished golf ball

product having the cover layer that Wu teaches within its disclosure. Exhibit C teaches that the golf ball taught therein is covered by the following patents: 4,783,078; 4,846,910; 4,858,923; 4,904,320; 4,915,390; 5,007,594; 5,080,367; 5,133,509; **5,334,673**; and D339,074. The '673 Patent teaches the cover sock of the Exhibit C finished golf ball. Exhibit C teaches that the golf ball taught therein has a cover material made from an "elastomer", having a thickness of .050", and 58 Shore D hardness. All three properties are within the range of mechanical properties of the claim invention (polyurethane is an elastomer, cover layer thickness ranges from 0.010 to 0.070 inches and the Shore D hardness is less that 64). Because it has been admitted by the inventor of the Sullivan '893 patent that the particular chemical properties of the materials (the chemical composition) used in the construction of a golf ball lack criticality as compared to the mechanical properties (the Shore D hardness, flexural modulus, layer thickness) of those compounds used for constructing the different layers (Exhibit G at 334), one of ordinary skill in the art at the time the invention was made would find it obvious to incorporate the teachings of Wu which inherently include the teachings of Shore hardness for the fully cured cover layer as taught in Exhibit C as obvious equivalent materials in order to achieve the same end result of providing a cover layer that has the same "click" and "feel" of a balata cover which the extra durability of an elastomeric material.

This rejection of claim 5 based on Nesbitt mentioning Molitor '637 in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Proposed Third Party Requester Rejection: Ground #31.

The requester submits on pages 57-58 in the request that claim 5 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '751.

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Molitor '751.

Below is a claim chart identifying the claim limitation and where Nesbitt and/or Molitor '637 disclose, teach or suggest the claim limitations. As reported in the Decision granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane material for the use as an outer layer.

Claim 5	Nesbitt (primary) mentioning Molitor '637
A golf ball comprising:	"The disclosure embraces **a golf ball** and method of making the same..." (Nesbitt, Abstract and FIGS. 1 & 2.)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or **core** form as a solid body of resilient polymeric material or rubber-like material in the shape of a **sphere**." (Nesbitt, col. 2, ll. 31-34.)
an inner cover layer having	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or **inner cover** 14 of molded hard, highly flexural modulus resinous material..." (Nesbitt, col. 2, ll. 34-37.)
a Shore D hardness of 60 or more molded over said spherical core,	Nesbitt: "[I]nner cover 14 of **molded hard**, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont de Nemours." (Nesbitt, col. 2, ll. 36-38.) Per the '130 Patent: "Type 1605 SURLYN (now designated SURLYN 8940)." ('130 Patent, col. 2, ll. 46-47.) Exhibit I: SURLYN 8940 has a **Shore D hardness of 65**.

said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	Nesbitt: "Reference is made to the application Ser. No. 155,658 of Robert P. **Molitor** issues into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: Molitor teaches, in examples 1-7, cover materials including a blend of two **ionomer resins**: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34.) See below for further explanation of how the % by weight and chemical composition limitations are taught.
and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer having	"An **outer** layer, ply, lamination or **cover** 16 ... is then remolded onto the inner play or layer 14 ..." (Nesbitt, col. 2, ll. 43-47.)
a Shore D hardness of about 64 or less	Nesbitt: "Reference is made to application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. ESTANE 58133 has a Shore D hardness of 55, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet) See below for Shore D hardness of 64 or less limitation explanation.
molded over said spherical intermediate ball to form a multi-layer golf ball,	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner play or layer 14 ...." (Nesbitt, col. 2, lines 43-47.)
said outer cover layer comprising a relatively soft	Exhibit J: ESTANE 58133 is a Polyester-Type **Thermoplastic Polyurethane** (TPU Compound) which is a non-ionomeric

polymeric material selected from the group consisting of non-ionomeric thermoplastic and thermosetting elastomers.	thermoplastic elastomer.

As mentioned above, Nesbitt references Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from about 5[%] to about 15% by weight of unsaturated carboxylic acid." '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) **ionomer resin having a flexural modulus of about 51,000 psi.**" See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid.

Also, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that

ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64. Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Moreover, Molitor '637 teaches a list of materials that may adapted for use in the invention:

> Homopolymeric and copolymeric substances, such as (1) vinyl resins formed by the polymerization of vinyl chloride or by the copolymerization of vinyl chloride with unsaturated polymerizable compounds, e.g., vinyl esters; (2) polyolefins such as polyethylene, polypropylene, polybutylene, transpolyisoprene, and the like, including copolymers of polyolefins; (3) polyurethanes such as are prepared from polyols and organic polyisocyanates; (4) polyamides such as polyhexamethylene; (5) polystyrene, high impact polystyrene, styrene acrylonitrile copolymer and ABS, which is acrylonitrile, butadiene styrene copolymer; (6) acrylic resins as exemplified by the copolymers of methylmethacrylate, acrylonitrile, and styrene, etc.; (7) thermoplastic rubbers such as the urethanes, copolymers of ethylene and propylene, and transpolyisoprene, block copolymers of styrene and cispolybutadiene, etc.; and (8) polyphenylene oxide resins, or a blend with high impact polystyrene known by the trade name "Noryl."

See Molitor '637, col. 5, ll. 33-50.

As shown above in the claim chart, Nesbitt mentioning Molitor '673 suggests the use of a soft outer cover layer including a polyurethane material. In an analogous golf ball, Molitor '751 teaches that:

> It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core **a cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel **cover of the golf ball** of the invention is made of a composition comprising a blend of (1) **a thermoplastic urethane having a shore A hardness less than 95** and (2) **an ionomer having a shore D hardness greater than 55.**

(Molitor '751, col. 2, ll.33-49 (emphasis added)).

Moreover, in explaining what constitutes a two-piece golf ball, Molitor '751 teaches that:

> The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, **but also includes balls having a separate solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt**, and other balls have non-wound cores.

(Molitor '751, col. 3, ll. 7-12 (emphasis added)).

As stated above, Molitor '751 teaches the cover of the golf ball has a Shore C hardness of less than 85, preferably 70-80, most preferably 72-76. As described in Molitor '751's TABLE bridging columns 7 and 8, Sample 8 constitutes one of the preferred embodiments and its cover is taught to have a Shore C hardness of 73. Patent Owner has admitted that a Shore C hardness of 73 is equal to a Shore D hardness of 47, see U.S. Pat. No. 6,905,648, Table 19 (Exhibit L). Thus, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

How one of ordinary skill in the art would discover this inherent mechanical property of Shore D hardness for the polyurethane material used in Molitor '751 is by "translating" a Shore C value to a Shore D value for the polyurethane material. How one of ordinary skill in the art "translates" a Shore C value to a Shore D value is by taking the known Shore hardness values with a given range, in this instance Shore C, for given materials, in this instance polyurethane golf ball covers materials, and taking corresponding measurements with a different set of Shore gauges, in this instance Shore D (but could also be Shore A). A resulting trendline plot occurs from performing this procedure wherein the range of known Shore C values are the abscissa and the range of measured Shore D values are the ordinate. Then, said plot can be use to read equivalent Shore D value for any given Shore C value within the known range of Shore C. This

is how one of ordinary skill in the art can know the equivalent Shore D or even Shore A hardness value for any given Shore C hardness value.

As stated in the request on page 28

> It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft non-ionomeric polymeric outer cover layer incorporated by Nesbitt and replace it with an outer cover layer made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that includes "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, ll. 61-68)

Moreover, because it appears that to one of ordinary skill in the art at the time the invention was created that the actual chemical composition of the material is not critical to the practice of the invention with respect to its mechanical performance, i.e. its "click and feel" for a golfer, one of ordinary skill in the art at the time the invention was made would find it obvious to substitute one material for another material if both materials had substantially the same mechanical properties.

This rejection of claim 5 based on Nesbitt mentioning Molitor '637 in view of Molitor '751 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Proposed Third Party Requester Rejection: Ground #32.

The requester submits on pages 58-62 in the request that claim 5 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Molitor '637.

Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Molitor '637.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.

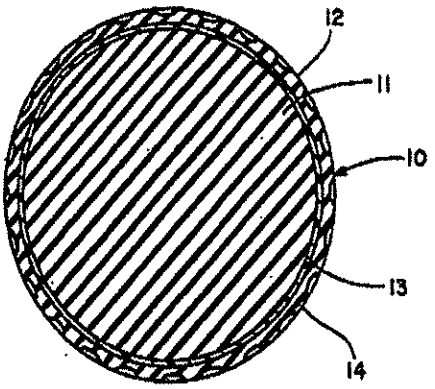
Claim 5	Proudfit
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)
a spherical core;	 "FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the shape of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material. (col. 7, lines 21-24; FIGS 1, 2.) "Two specific solid core compositions used with the new two- layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)
an inner cover layer having	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)
a Shore D hardness of about 60 or more	The composition of the inner cover layer is described in Table 6.

	TABLE 6 Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.) SURLYN 8940 has a **Shore D hardness of 65**; SURLYN 9910 has a **Shore D hardness of 64**, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60. "The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (Proudfit, col. 8, ll. 32-38.)
molded over said spherical core,	"The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (Proudfit, col. 8, ll. 32-38.)
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	The composition of the inner cover layer is described in Table 6. TABLE 6 Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.) SURLYN 8940 and 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid. Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical

	properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The '981 Patent discloses the preferable amount of **unsaturated carboxylic acid is "from about 5[%] to about 15% by weight.**" ('981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the '981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.
and having a modulus of from about 15,000 to about 70,000 psi;	"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1 .) "Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.) The composition of the inner cover layer is described in Table 6. **TABLE 6** Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.)
an outer cover layer having a Shore D hardness of about 64 or less	"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft **outer layer** 14 of polymeric material." (Proudfit, col. 7, ll. 21-24.) "... an outer layer of soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclose in Table 7 reproduced below.

	TABLE 7 Composition of Outer Layer (Parts by Weight) Trans PolyIsoprene (TP-301) 60.00 Polybutadiene 40.00 Zinc Oxide 5.00 Titanium DiOxide 15.00 Ultramarine Blue color .50 Zinc DiAcrylate 35.00 Peroxide (Varox 230 XL) 2.50 Total 160.00 Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadience is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that **cover has a Shore D hardness of 52**. Thus, Proudfit's outer layer cover inherently has a Shore D hardness of less than 64.
molded over said spherical intermediate ball to form a multi-layer golf ball,	"A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. **The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]** during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as organic peroxide rather than using the conventional sulfur and RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls." (Proudfit, col. 5, ll. 17-27.)
the outer layer comprising polyurethane based material.	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) Also, see below.

As pointed out in the request on page 61 and 62:

While Proudfit may not expressly disclose the use of polyurethane as an outer cover material, it would have been obvious given that "[t]he patent literature is replete with

proposed cover formulations seeking to improve upon the balata and ionomer covers [including] [p]olyurethane ...." (See Molitor '751, col. 2, lines 9-12.) Soft polyurethane materials had been known to be a substitute for balata covers for decades prior to the filing of the '130 patent.

For example, Molitor '637 discloses the use of polyurethane material as a soft polymeric material that may be used as an outer cover layer of a golf ball. (See Molitor '637, col. 5, lines 33-41; col. 18, Examples 16 and 17.) One exemplary polyurethane material used by Molitor as an outer cover material includes Estane 58133.

As was readily appreciated by those skilled in the art--including the inventor of the '130 patent--the types of materials used in a golf ball are not as critical to a golf ball's playability as are the mechanical properties of those materials. (See Exhibit G at 334.) The Estane 58133 is a relatively soft material and has a Shore D hardness of 55 and is also a low flexural modulus material having a modulus of about 25,000 psi. (See Exhibit J.) Proudfit's outer cover layer is also relatively soft and has a flexural modulus between 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Due to the similarities between these two materials, the ordinarily skilled artisan would have recognized the substitutability of these two materials as well as the benefits of using polyurethane as an outer cover material.

On page 62, the request concludes:

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the balata-based outer cover layer of Proudfit to include the Estane polyurethane outer cover layer material of Molitor '637 because such was a well known substitute to balata and gives a number of advantages over balata as would have been readily appreciated by those skilled in the art. These advantages include: (1) improved processability; (2) improved durability when compared to balata; (3) cost-effectiveness when compared to balata; and (4) having a good "click" and "feel." (See *supra* [regarding the what "click" and "feel" mean to a golfer]) All of this would have led one of ordinary skill in the art to replace the soft balata outer cover layer of Proudfit with the soft polyurethane outer cover layer of Molitor '637 at the time of the alleged invention.

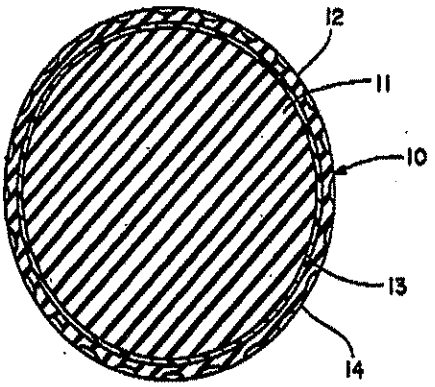
This rejection of claim 5 based on Proudfit in view of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Proposed Third Party Requester Rejection: Ground #33.

The requester submits on pages 62-64 in the request that claim 5 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Wu.

Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Wu.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.

Claim 5	Proudfit
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)
a spherical core;	 "FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the same of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24; FIGS 1, 2.) "Two specific solid core compositions used with the new two- layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)
an inner cover layer having	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which

	includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)
a Shore D hardness of about 60 or more	The composition of the inner cover layer is described in Table 6. **TABLE 6** Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.) SURLYN 8940 has a **Shore D hardness of 65**; SURLYN 9910 has a **Shore D hardness of 64**, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60. "The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (Proudfit, col. 8, ll. 32-38.)
molded over said spherical core,	"The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (Proudfit, col. 8, ll. 32-38.)
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	The composition of the inner cover layer is described in Table 6. **TABLE 6** Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.) SURLYN 8940 and 9910 are both low acid ionomer

	resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid. Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The '981 Patent discloses the preferable amount of **unsaturated carboxylic acid is "from about 5[%] to about 15% by weight.**" ('981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the '981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.
and having a modulus of from about 15,000 to about 70,000 psi;	"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1 .) "Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.) The composition of the inner cover layer is described in Table 6. **TABLE 6** Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type / Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.)
an outer cover layer having a Shore D hardness of about 64 or less	"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft **outer layer** 14 of polymeric material." (Proudfit, col. 7, ll. 21-24.)

	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclose in Table 7 reproduced below. **TABLE 7** Composition of Outer Layer (Parts by Weight) Trans Polyisoprene (TP-301) 60.00 Polybutadiene 40.00 Zinc Oxide 5.00 Titanium DiOxide 17.00 Ultramarine Blue color .50 Zinc DiAcrylate 35.00 Peroxide (Varox 230 XL) 2.50 Total 160.00 Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadience is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that **cover has a Shore D hardness of 52**. Thus, Proudfit's outer layer cover inherently has a Shore D hardness of less than 64.
molded over said spherical intermediate ball to form a multi-layer golf ball,	"A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. **The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]** during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as organic peroxide rather than using the conventional sulfur and RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls." (Proudfit, col. 5, ll. 17-27.)
the outer layer comprising polyurethane based material.	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) Also, see below.

As pointed out in the request on pages 62 and 63:

... Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer of a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the soft balata outer cover layer of Proudfit to include the soft polyurethane material taught by Wu. Wu teaches that: "The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit. It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and 'feel" of balata. (Wu at col. 1, lines 36-46.) As the inventor of the '130 patent had indicated in a 1994 publication, golf ball designers understood that the mechanical properties of the layers impacted the performance of the golf ball more than the materials themselves. (Exhibit G at 334.) Additionally, Wu's polyurethane material inherently has a flexural modulus of about 23,000 psi as measured in accordance with ASTM standards. (Decl. of Jeff Dalton at ¶ 7.) Proudfit's outer cover layer material has a flexural modulus of between about 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31 .) Thus, one of ordinary skill in the art would have appreciated that using Wu's polyurethane as Proudfit's outer cover layer would have provided similar playability characteristics as well as numerous advantages including, for example, durability.

Based on Wu's teachings, one of ordinary skill in the art would have recognized the substitutability of soft polyurethane for soft balata-based materials and the advantages of making such a substitution. These advantages include (1) low price compared to balata; (2) better cut resistance when compared to balata; and (3) a "click" and "feel" that is similar to balata. Moreover, the replacing the balata-material taught by Proudfit would have been obvious to those skilled in the art prior to November 9, 1995 because before that time, the Titleist Professional™ golf ball, which had used Wu's polyurethane material, had replaced balata-covered balls as the market leader. (See Exhibit C; see also Decl. of Jeffery L. Dalton at ¶¶ 3-4.)

On page 64 the request concludes with:

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with an outer cover layer made of soft polyurethane material because polyurethane provides numerous advantages over balata while exhibiting the "click" and "feel" of balata.

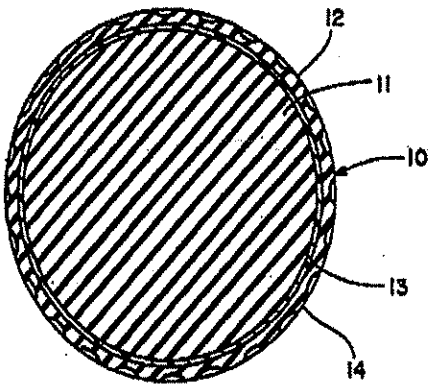
This rejection of claim 5 based on Proudfit in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Proposed Third Party Requester Rejection: Ground #34.

The requester submits on pages 64-65 in the request that claim 5 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Molitor '751.

Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Molitor '751.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.

Claim 5	Proudfit
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)
a spherical core;	 "FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the same of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-

	24; FIGS 1, 2.) "Two specific solid core compositions used with the new two- layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)
an inner cover layer having	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)
a Shore D hardness of about 60 or more	The composition of the inner cover layer is described in Table 6. **TABLE 6** Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type / Blend Ratio Sodium- Surlyn 8940 / 75% Zinc- Surlyn 9910 / 25% (Proudfit, col. 8, ll. 22-30.) SURLYN 8940 has a **Shore D hardness of 65**; SURLYN 9910 has a **Shore D hardness of 64**, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60. "The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (Proudfit, col. 8, ll. 32-38.)
molded over said spherical core,	"The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (Proudfit, col. 8, ll. 32-38.)
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an	The composition of the inner cover layer is described in Table 6.

alpha, beta-unsaturated carboxylic acid	TABLE 6 Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.) SURLYN 8940 and 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid. Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The '981 Patent discloses the preferable amount of **unsaturated carboxylic acid is "from about 5[%] to about 15% by weight.**" ('981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the '981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.
and having a modulus of from about 15,000 to about 70,000 psi;	"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1 .) "Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.) The composition of the inner cover layer is described in Table 6.

	TABLE 6 Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.)
an outer cover layer having a Shore D hardness of about 64 or less	"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft **outer layer** 14 of polymeric material." (Proudfit, col. 7, ll. 21-24.) "... an outer layer of soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclose in Table 7 reproduced below. TABLE 7 Composition of Outer Layer (Parts by Weight) Trans Polyisoprene (TP-301) — 60.00 Polybutadiene — 40.00 Zinc Oxide — 5.00 Titanium DiOxide — 11.00 Ultramarine Blue color — .50 Zinc DiAcrylate — 31.00 Peroxide (Varox 230 XL) — 2.50 Total — 160.00 Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadience is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that **cover has a Shore D hardness of 52.** Thus, Proudfit's outer layer cover inherently has a Shore D hardness of less than 64.
molded over said spherical intermediate ball to form a multi-layer golf ball,	"A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. **The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]** during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as

	organic peroxide rather than using the conventional sulfur and RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls." (Proudfit, col. 5, ll. 17-27.)
the outer layer comprising polyurethane based material.	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) Also, see below.

As pointed out in the request on pages 64 and 65:

...Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer for a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with the soft polyurethane outer cover layer taught by Molitor '751.

Molitor '751 teaches that: It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55. (Molitor '751, col. 2, lines 33-49.) In explaining what a "two-piece" golf ball is, the Molitor '751 patent explains that: The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and Other balls having non-wound cores. (Molitor '751, col. 2, lines 7-12.)

Proudfit teaches a "two-piece" golf ball that fits within this definition. Molitor '751 explains that the advantages of using a cover layer including a soft polyurethane material on a two-piece golf ball, such as the golf ball of Proudfit, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two- piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover material as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19 (Exhibit L.) A cover

material having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

On page 65 the request concludes:

> Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the soft balata outer cover layer of Proudfit with the soft outer cover layer including a soft polyurethane material as taught by Molitor '751 to provide golf balls that have "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

This rejection of claim 5 based on Proudfit in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Proposed Third Party Requester Rejection: Ground #35.

The requester submits on pages 67-68 in the request that claim 6 is unpatentable under 35 U.S.C. § 102(b) as being anticipated by Sullivan.

This rejection is not adopted for the reasoning that based on the prosecution history of the '130 Patent's copendency Sullivan '831 (Sullivan) is not prior art, see the Decision granting reexamination, mailed 04-06-06, para. 9.

Proposed Third Party Requester Rejection: Ground #36.

The requester submits on pages 69-72 in the request that claim 6 is unpatentable under 35 U.S.C. § 102(b) as being anticipated by Nesbitt.

In the request on pages 69 through 72 the third party requester proposes that claim 5 be rejected based upon Nesbitt alone with the incorporation by reference of Molitor '637. The third party requester points out that Molitor '637 is incorporated by reference into Nesbitt because Nesbitt refers to Molitor '637. (See Nesbitt col. 3, ll. 54-60).

This rejection is <u>not adopted</u>.

MPEP § 608.01(p) states that

> [m]ere reference to another application, patent, or publication is not an incorporation of anything therein into the application containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph. *In re de Seversky*, 474 F.2d 671, 177 USPQ 144 (CCPA 1973). 37 CFR 1.57(b)(1) limits a proper incorporation by reference (except as provided in 37 CFR 1.57(a)) to instances only where the perfecting words "incorporated by reference" or the root of the words "incorporate" (e.g., incorporating, incorporated) and "reference" (e.g., referencing) appear. The requirement for specific root words will bring greater clarity to the record and provide a bright line test as to where something is being referred to is an incorporation by reference. The Office intends to treat references to documents that do not meet this "bright line" test as noncompliant incorporations by reference and may require correction pursuant to 37 CFR 1.57(g). If a reference to a document does not clearly indicate an intended incorporation by reference, examination will proceed as if no incorporation by reference statement has been made and the Office will not expend resources trying to determine if an incorporation by reference was intended. In addition to other requirements for an application, the referencing application must include an identification of the referenced patent, application, or publication. See 37 CFR 1.57(b)(2). Particular attention should be directed to specific portions of the referenced document where the subject matter being incorporated may be found.

Thus, the reference to or the mentioning of another document does not confer an "incorporation by reference" of material especially "essential material" as defined in 37 CFR 1.57(c) which would be needed in this case to supply a basis for a rejection of the subject matter of this claimed invention, i.e. a reference must provide an enabling disclosure for all of the claimed structural features in the claim in order to anticipate the claim.

Proposed Third Party Requester Rejection: Ground #37.

In the alternative, the requester submits on pages 69-72 in the request that claim 6 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '637.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt in view of Molitor '637, as evidenced by Exhibit I (SURLYN Thermoplastic Resins Product Information Sheet) and Exhibit J (ESTANE 58133 Product Specification Sheet.)

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Molitor '637 discloses, teaches or suggests the claim limitations.

Claim 6	Nesbitt (primary) with Molitor '637 (teaching)
A multi-layer golf ball comprising:	"The disclosure embraces **a golf ball** and method of making the same..." (Nesbitt, Abstract and FIGS. 1 & 2.) "The present invention relates to golf balls and, more particularly, to improved golf balls comprising **multi-layer covers** which have a hard inner layer and a relatively soft outer layer." (Nesbitt, col. 1, lines 14-17.)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or **core** form as a solid body of resilient polymeric material or rubber-like material in the shape of a **sphere**." (Nesbitt, col. 2, ll. 31-34.)
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or **inner cover** 14 of molded hard, highly flexural modulus resinous material..." (Nesbitt, col. 2, ll. 34-37.) "The multi-layered cover 12 comprises two layers: a first or inner layer or ply 14 .... The inner layer can be ionomer, ionomer blends ...." (Nesbitt, col. 5, lines 6-9.)
said inner cover layer having a Shore D	Nesbitt: "[I]nner cover 14 of **molded hard**, high

hardness of 60 or greater	flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont de Nemours." (Nesbitt, col. 2, ll. 36-38.) Per the '130 Patent: "Type 1605 SURLYN (now designated SURLYN 8940)." ('130 Patent, col. 2, ll. 46-47.) Exhibit I: SURLYN 8940 has a **Shore D hardness of 65**.
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	Nesbitt: "Reference is made to the application Ser. No. 155,658 of Robert P. **Molitor** issues into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: Molitor teaches, in examples 1-7, cover materials including a blend of two **ionomer resins**: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34.) See below for further explanation of how the % by weight and chemical composition limitations are taught.
and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,	"An **outer** layer, ply, lamination or **cover** 16 ... is then remolded onto the inner play or layer 14 ..." (Nesbitt, col. 2, ll. 43-47.)
the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,	Nesbitt: "Reference is made to application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.

said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, lines 43-47.) Nesbitt: Teaches Surlyn® 1855 (now Surlyn® 9020) which has a flexural modulus of about 14,000 psi. Exhibit J: Estane 58133 Product Information: ESTANE 58133 has a modulus of 25,000 psi.
and a Shore D hardness of 64 or less.	Nesbitt: "Reference is made to the application Ser. No. 155,658 of Robert P. **Molitor** issues into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for one or both layers 14 and 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: Teaches cover materials including "polyurethanes such as are prepared from polyols and organic polyisocyanates"; specifically teaches Estane 58133 thermoplastic polyurethane. (Molitor '637, col. 5, lines 39-41; col. 18, lines 31-59 (examples 16 and 17).) Exhibit J: ESTANE 58133 is a Polyester-Type **Thermoplastic Polyurethane** (TPU Compound) which is a non-ionomeric thermoplastic elastomer. ESTANE 58133 has a **Shore D hardness of 55**, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet) See below for Shore D hardness of 64 or less limitation explanation.

As mentioned above, Nesbitt references Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN

1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from **about 5[%] to about 15% by weight of unsaturated carboxylic acid.**" '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) **ionomer resin having a flexural modulus of about 51,000 psi.**" See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid.

Also, as mentioned above, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64. Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Moreover, Molitor '637 teaches a list of materials that may adapted for use in the invention:

> Homopolymeric and copolymeric substances, such as (1) vinyl resins formed by the polymerization of vinyl chloride or by the copolymerization of vinyl chloride with unsaturated polymerizable compounds, e.g., vinyl esters; (2) polyolefins such as polyethylene, polypropylene, polybutylene, transpolyisoprene, and the like, including copolymers of polyolefins; (3) polyurethanes such as are prepared from polyols and organic polyisocyanates; (4) polyamides such as polyhexamethylene; (5) polystyrene, high impact polystyrene, styrene acrylonitrile copolymer and ABS, which is acrylonitrile, butadiene styrene copolymer; (6) acrylic resins as exemplified by the copolymers of methylmethacrylate, acrylonitrile, and styrene, etc.; (7) thermoplastic rubbers such as the urethanes, copolymers of ethylene and propylene, and transpolyisoprene, block copolymers of styrene and cispolybutadiene, etc.; and (8) polyphenylene oxide resins, or a blend with high impact polystyrene known by the trade name "Noryl."

See Molitor '637, col. 5, ll. 33-50.

In addition, Nesbitt discloses its outer layer was made from SURLYN 1855 (now SURLYN 9020). This material had inherently flexural modulus of about 14,000 psi and a Shore hardness of 55, see Exhibit I "Typical Properties for Selected Grades of SURLYN". Moreover, as admitted by the inventor Sullivan of the '873 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves, see Exhibit G at 334.

Thus, because it appears that to one of ordinary skill in the art at the time the invention was created that the actual chemical composition of the material is not critical to the practice of the invention with respect to its mechanical performance, i.e. its "click and feel" for a golfer, one of ordinary skill in the art at the time the invention was made would find it obvious to substitute one material for another material if both materials had substantially the same mechanical properties.

This rejection of claim 6 based on Nesbitt in view of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Proposed Third Party Requester Rejection: Ground #38.

The requester submits on pages 72-74 in the request that claim 6 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Wu.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Wu, as evidenced by Exhibit C.

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Wu discloses, teaches or suggests the claim limitations. As reported in the Decision of 04-06-06 granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials, which are non-ionomeric thermoset materials, for the use as an outer layer.

Claim 6	Nesbitt (primary) mentioning Molitor '637 with Wu (teaching)
A multi-layer golf ball comprising:	"The disclosure embraces **a golf ball** and method of making the same..." (Nesbitt, Abstract and FIGS. 1 & 2.) "The present invention relates to golf balls and, more particularly, to improved golf balls comprising **multi-layer covers** which have a hard inner layer and a relatively soft outer layer." (Nesbitt, col. 1, lines 14-17.)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or **core** form as a solid body of resilient polymeric material or rubber-like material in the shape of a **sphere**."

	(Nesbitt, col. 2, ll. 31-34.)
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or **inner cover** 14 of molded hard, highly flexural modulus resinous material..." (Nesbitt, col. 2, ll. 34-37.) "The multi-layered cover 12 comprises two layers: a first or inner layer or ply 14 .... The inner layer can be ionomer, ionomer blends ...." (Nesbitt, col. 5, lines 6-9.)
said inner cover layer having a Shore D hardness of 60 or greater	Nesbitt: "[I]nner cover 14 of **molded hard**, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont de Nemours." (Nesbitt, col. 2, ll. 36-38.) Per the '130 Patent: "Type 1605 SURLYN (now designated SURLYN 8940)." ('130 Patent, col. 2, ll. 46-47.) Exhibit I: SURLYN 8940 has a **Shore D hardness of 65**.
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	Nesbitt: "Reference is made to the application Ser. No. 155,658 of Robert P. **Molitor** issues into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: Molitor teaches, in examples 1-7, cover materials including a blend of two **ionomer resins**: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34.) See below for further explanation of how the % by weight and chemical composition limitations are taught.
and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer molded about said spherical intermediate ball to form a	"An **outer** layer, ply, lamination or **cover** 16 ... is then remolded onto the inner play or layer 14 ..." (Nesbitt,

multi-layer golf ball,	col. 2, ll. 43-47.) Wu: "Preferably, a golf ball is made in accordance with the present invention by molding a cover about a core wherein the cover is formed from a polyurethane composition comprising a polyurethane prepolymer and a slow-reacting polyamine curing agent or a difunctional glycol." (Wu, col. 3, ll. 62-66.)
the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,	Nesbitt: "Reference is made to application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. Wu: "[t]he present invention is a golf ball product made from a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents or difunctional glycols. The term "golf ball product" as used in the specification and claims means a cover, a core, a center or a one-piece golf ball. The cover of a golf ball made in accordance with the present invention has been found to have good shear resistance, cut resistance, durability and resiliency. **Preferably, the polyurethane composition of the present invention is used to made the cover of a golf ball.**" (Wu, col. 2, ll. 33-44.)
said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, lines 43-47.) Nesbitt: Teaches Surlyn® 1855 (now Surlyn® 9020) which has a flexural modulus of about 14,000 psi. Exhibit J: Estane 58133 Product Information: ESTANE 58133 has a modulus of 25,000 psi.

and a Shore D hardness of 64 or less.	Nesbitt: "Reference is made to the application Ser. No. 155,658 of Robert P. **Molitor** issues into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for one or both layers 14 and 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: Teaches cover materials including "polyurethanes such as are prepared from polyols and organic polyisocyanates"; specifically teaches Estane 58133 thermoplastic polyurethane. (Molitor '637, col. 5, lines 39-41; col. 18, lines 31-59 (examples 16 and 17).) Exhibit J: ESTANE 58133 is a Polyester-Type **Thermoplastic Polyurethane** (TPU Compound) which is a non-ionomeric thermoplastic elastomer. ESTANE 58133 has a **Shore D hardness of 55**, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet) See below for Shore D hardness of 64 or less limitation explanation. Wu: "With polyurethanes made in accordance with the present invention, the degree of cure which has taken place is dependent upon, *inter alia*, the time, temperature, type of curative, and amount of catalyst used. It has been found that the degree of cure of the cover composition is directly proportional to the hardness of the composition. A hardness of about 10D to 30D, Shore D hardness for the cover stock at the end of the intermediate curing step (i.e. just prior to the final molding step) has been found to be suitable for the present invention, More preferred is a hardness of about 12D to 20D." (Wu, col. 6, ll. 27-38.) See below for more explanation of how Wu teaches and/or suggests the Shore D hardness of 64 or less limitation explanation.

As mentioned above, Nesbitt mentioning Molitor '637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that SURLYN covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. This teaching of Shore D hardness is directed to an intermediate curing step product prior to the final molding process to finish the golf ball. Exhibit C demonstrates the actual finished golf ball product having the cover layer that Wu teaches within its disclosure. Exhibit C teaches that the golf ball taught therein is covered by the following patents: 4,783,078; 4,846,910; 4,858,923; 4,904,320; 4,915,390; 5,007,594; 5,080,367; 5,133,509; **5,334,673**; and D339,074. The '673 Patent teaches the cover sock of the Exhibit C finished golf ball. Exhibit C teaches that the golf ball taught therein has a cover material made from an "elastomer", having a thickness of .050", and 58 Shore D hardness. All three properties are within the range of mechanical properties of the claim invention (polyurethane is an elastomer, cover layer thickness ranges from 0.010 to 0.070 inches and the Shore D hardness is less that 64). Because it has been admitted by the inventor of the Sullivan '893 patent that the particular chemical properties of the materials (the chemical composition) used in the construction of a golf ball lack criticality as compared to the mechanical properties (the Shore D hardness, flexural modulus, layer thickness) of those

compounds used for constructing the different layers (Exhibit G at 334), one of ordinary skill in the art at the time the invention was made would find it obvious to incorporate the teachings of Wu which inherently include the teachings of Shore hardness for the fully cured cover layer as taught in Exhibit C as obvious equivalent materials in order to achieve the same end result of providing a cover layer that has the same "click" and "feel" of a balata cover which the extra durability of an elastomeric material.

This rejection of claim 6 based on Nesbitt mentioning Molitor '637 in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Proposed Third Party Requester Rejection: Ground #39.

The requester submits on pages 74-76 in the request that claim 6 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '751.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Molitor '751.

Below is a claim chart identifying the claim limitation and where Nesbitt and/or Molitor '637 disclose, teach or suggest the claim limitations. As reported in the Decision granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane material for the use as an outer layer.

Claim 6	Nesbitt (primary) mentioning Molitor '637
A multi-layer golf ball comprising:	"The disclosure embraces **a golf ball** and method of making the same..." (Nesbitt, Abstract and FIGS. 1 &

	2.) "The present invention relates to golf balls and, more particularly, to improved golf balls comprising **multi-layer covers** which have a hard inner layer and a relatively soft outer layer." (Nesbitt, col. 1, lines 14-17.)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or **core** form as a solid body of resilient polymeric material or rubber-like material in the shape of a **sphere.**" (Nesbitt, col. 2, ll. 31-34.)
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or **inner cover** 14 of molded hard, highly flexural modulus resinous material..." (Nesbitt, col. 2, ll. 34-37.) "The multi-layered cover 12 comprises two layers: a first or inner layer or ply 14 .... The inner layer can be ionomer, ionomer blends ...." (Nesbitt, col. 5, lines 6-9.)
said inner cover layer having a Shore D hardness of 60 or greater	Nesbitt: "[I]nner cover 14 of **molded hard**, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont de Nemours." (Nesbitt, col. 2, ll. 36-38.) Per the '130 Patent: "Type 1605 SURLYN (now designated SURLYN 8940)." ('130 Patent, col. 2, ll. 46-47.) Exhibit I: SURLYN 8940 has a **Shore D hardness of 65.**
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	Nesbitt: "Reference is made to the application Ser. No. 155,658 of Robert P. **Molitor** issues into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: Molitor teaches, in examples 1-7, cover materials including a blend of two **ionomer resins**:

	SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34.) See below for further explanation of how the % by weight and chemical composition limitations are taught.
and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,	"An **outer** layer, ply, lamination or **cover** 16 ... is then remolded onto the inner play or layer 14 ..." (Nesbitt, col. 2, ll. 43-47.)
the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,	Nesbitt: "Reference is made to application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.
said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, lines 43-47.) Nesbitt: Teaches Surlyn® 1855 (now Surlyn® 9020) which has a flexural modulus of about 14,000 psi. Exhibit J: Estane 58133 Product Information: ESTANE 58133 has a modulus of 25,000 psi.
and a Shore D hardness of 64 or less.	Nesbitt: "Reference is made to the application Ser. No. 155,658 of Robert P. **Molitor** issues into U.S. Pat. No. 4,274,**637** which describes a number of foamable compositions of a character which may be employed for one or both layers 14 and 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.) Molitor '637: Teaches cover materials including

	"polyurethanes such as are prepared from polyols and organic polyisocyanates"; specifically teaches Estane 58133 thermoplastic polyurethane. (Molitor '637, col. 5, lines 39-41; col. 18, lines 31-59 (examples 16 and 17).) Exhibit J: ESTANE 58133 is a Polyester-Type **Thermoplastic Polyurethane** (TPU Compound) which is a non-ionomeric thermoplastic elastomer. ESTANE 58133 has a **Shore D hardness of 55**, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet) See below for Shore D hardness of 64 or less limitation explanation.

As mentioned above, Nesbitt references Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from about 5[%] to about 15% by weight of unsaturated carboxylic acid." '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) **ionomer resin having a flexural modulus of about 51,000 psi.**" See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial

Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid.

Also, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64. Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Moreover, Molitor '637 teaches a list of materials that may adapted for use in the invention:

> Homopolymeric and copolymeric substances, such as (1) vinyl resins formed by the polymerization of vinyl chloride or by the copolymerization of vinyl chloride with unsaturated polymerizable compounds, e.g., vinyl esters; (2) polyolefins such as polyethylene, polypropylene, polybutylene, transpolyisoprene, and the like, including copolymers of polyolefins; (3) polyurethanes such as are prepared from polyols and organic polyisocyanates; (4) polyamides such as polyhexamethylene; (5) polystyrene, high impact polystyrene, styrene acrylonitrile copolymer and ABS, which is acrylonitrile, butadiene styrene copolymer; (6) acrylic resins as exemplified by the copolymers of methylmethacrylate, acrylonitrile, and styrene, etc.; (7) thermoplastic rubbers such as the urethanes, copolymers of ethylene and propylene, and transpolyisoprene, block copolymers of styrene and cispolybutadiene, etc.; and (8) polyphenylene oxide resins, or a blend with high impact polystyrene known by the trade name "Noryl."

See Molitor '637, col. 5, ll. 33-50.

As shown above in the claim chart, Nesbitt mentioning Molitor '673 suggests the use of a soft outer cover layer including a polyurethane material. In an analogous golf ball, Molitor '751 teaches that:

> It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core **a cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel **cover of the golf ball** of the invention is made of a composition comprising a blend of (1) **a thermoplastic urethane having a shore A hardness less than 95** and (2) **an ionomer having a shore D hardness greater than 55**.

(Molitor '751, col. 2, ll.33-49 (emphasis added)).

Moreover, in explaining what constitutes a two-piece golf ball, Molitor '751 teaches that:

> The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, **but also includes balls having a separate solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt**, and other balls have non-wound cores.

(Molitor '751, col. 3, ll. 7-12 (emphasis added)).

As stated above, Molitor '751 teaches the cover of the golf ball has a Shore C hardness of less than 85, preferably 70-80, most preferably 72-76. As described in Molitor '751's TABLE bridging columns 7 and 8, Sample 8 constitutes one of the preferred embodiments and its cover is taught to have a Shore C hardness of 73. Patent Owner has admitted that a Shore C hardness of 73 is equal to a Shore D hardness of 47, see U.S. Pat. No. 6,905,648, Table 19 (Exhibit L). Thus, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

How one of ordinary skill in the art would discover this inherent mechanical property of Shore D hardness for the polyurethane material used in Molitor '751 is by "translating" a Shore C value to a Shore D value for the polyurethane material. How one of ordinary skill in the art "translates" a Shore C value to a Shore D value is by taking the known Shore hardness values

with a given range, in this instance Shore C, for given materials, in this instance polyurethane golf ball covers materials, and taking corresponding measurements with a different set of Shore gauges, in this instance Shore D (but could also be Shore A). A resulting trendline plot occurs from performing this procedure wherein the range of known Shore C values are the abscissa and the range of measured Shore D values are the ordinate. Then, said plot can be use to read equivalent Shore D value for any given Shore C value within the known range of Shore C. This is how one of ordinary skill in the art can know the equivalent Shore D or even Shore A hardness value for any given Shore C hardness value.

As stated in the request on page 28

> It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft non-ionomeric polymeric outer cover layer incorporated by Nesbitt and replace it with an outer cover layer made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that includes "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, ll. 61-68)

Moreover, because it appears that to one of ordinary skill in the art at the time the invention was created that the actual chemical composition of the material is not critical to the practice of the invention with respect to its mechanical performance, i.e. its "click and feel" for a golfer, one of ordinary skill in the art at the time the invention was made would find it obvious to substitute one material for another material if both materials had substantially the same mechanical properties.

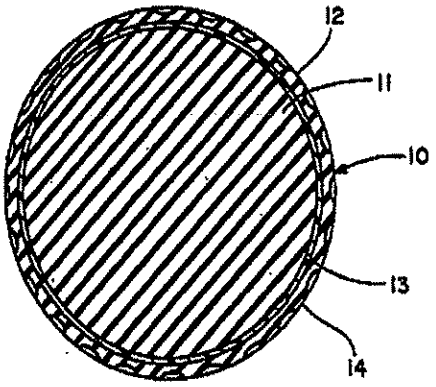
This rejection of claim 6 based on Nesbitt mentioning Molitor '637 in view of Molitor '751 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Proposed Third Party Requester Rejection: Ground #40.

The requester submits on pages 76-80 in the request that claim 6 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Molitor '637.

Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Molitor '637.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.

Claim 6	Proudfit
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)
a spherical core;	 "FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the same of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer

	layer 14 of polymeric material. (col. 7, lines 21-24; FIGS 1, 2.) "Two specific solid core compositions used with the new two- layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)
said inner cover layer having a Shore D hardness of 60 or greater	The composition of the inner cover layer is described in Table 6. **TABLE 6** Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.) SURLYN 8940 has a **Shore D hardness of 65**; SURLYN 9910 has a **Shore D hardness of 64**, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60. "The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (Proudfit, col. 8, ll. 32-38.)
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	"The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (Proudfit, col. 8, ll. 32-38.)
and having a modulus of from about 15,000 to about 70,000 psi;	The composition of the inner cover layer is described in Table 6.

	TABLE 6 Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.) SURLYN 8940 and 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid. Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The '981 Patent discloses the preferable amount of **unsaturated carboxylic acid is "from about 5[%] to about 15% by weight.**" ('981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the '981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.
an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,	"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1 .) "Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.) The composition of the inner cover layer is described in Table 6.

	TABLE 6 Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8540 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.)
the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,	"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft **outer layer** 14 of polymeric material." (Proudfit, col. 7, ll. 21-24.) "... an outer layer of soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclose in Table 7 reproduced below. TABLE 7 Composition of Outer Layer (Parts by Weight) Trans PolyIsoprene (TP-301) — 60.00 Polybutadiene — 40.00 Zinc Oxide — 5.00 Titanium DiOxide — 17.00 Ultramarine Blue color — .50 Zinc DiAcrylate — 31.00 Peroxide (Varox 230 XL) — 2.50 Total — 160.00 Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadience is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that **cover has a Shore D hardness of 52**. Thus, Proudfit's outer layer cover inherently has a Shore D hardness of less than 64.
said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	"A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. **The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]** during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as organic peroxide rather than using the conventional sulfur and

	RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls." (Proudfit, col. 5, ll. 17-27.)
and a Shore D hardness of 64 or less.	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) Also, see below.

As pointed out in the request on page 79 and 80:

While Proudfit may not expressly disclose the use of polyurethane as an outer cover material, it would have been obvious given that "[t]he patent literature is replete with proposed cover formulations seeking to improve upon the balata and ionomer covers [including] [p]olyurethane ...." (See Molitor '751, col. 2, lines 9-12.) Soft polyurethane materials had been known to be a substitute for balata covers for decades prior to the filing of the '130 patent.

For example, Molitor '637 discloses the use of polyurethane material as a soft polymeric material that may be used as an outer cover layer of a golf ball. (See Molitor '637, col. 5, lines 33-41; col. 18, Examples 16 and 17.) One exemplary polyurethane material used by Molitor as an outer cover material includes Estane 58133.

As was readily appreciated by those skilled in the art--including the inventor of the '130 patent--the types of materials used in a golf ball are not as critical to a golf ball's playability as are the mechanical properties of those materials. (See Exhibit G at 334.) The Estane 58133 is a relatively soft material and has a Shore D hardness of 55 and is also a low flexural modulus material having a modulus of about 25,000 psi. (See Exhibit J.) Proudfit's outer cover layer is also relatively soft and has a flexural modulus between 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31 .) Due to the similarities between these two materials, the ordinarily skilled artisan would have recognized the substitutability of these two materials as well as the benefits of using polyurethane as an outer cover material.

On page 80, the request concludes:

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the balata-based outer cover layer of Proudfit to include the Estane polyurethane outer cover layer material of Molitor '637 because such was a well known substitute to balata and gives a number of advantages over balata as would have been readily appreciated by those skilled in the art. These advantages include: (1) improved processability; (2) improved durability when compared to balata; (3) cost-effectiveness when compared to balata; and (4) having a good "click" and "feel." (See *supra* [regarding the what "click" and "feel" mean to a golfer]) All of this would have led one of ordinary

skill in the art to replace the soft balata outer cover layer of Proudfit with the soft polyurethane outer cover layer of Molitor '637 at the time of the alleged invention.

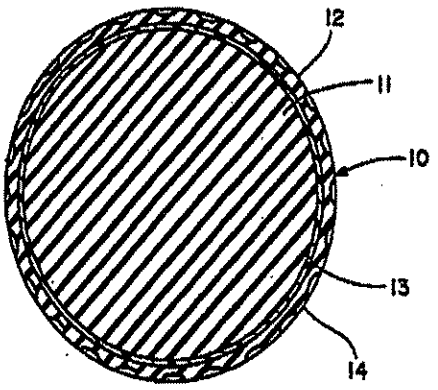
This rejection of claim 6 based on Proudfit in view of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Proposed Third Party Requester Rejection: Ground #41.

The requester submits on pages 81-82 in the request that claim 6 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Wu.

Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Wu.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.

Claim 6	Proudfit
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)
a spherical core;	

	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the same of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material. (col. 7, lines 21-24; FIGS 1, 2.) "Two specific solid core compositions used with the new two- layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)
said inner cover layer having a Shore D hardness of 60 or greater	The composition of the inner cover layer is described in Table 6. **TABLE 6** Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.) SURLYN 8940 has a **Shore D hardness of 65**; SURLYN 9910 has a **Shore D hardness of 64**, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60. "The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (Proudfit, col. 8, ll. 32-38.)
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	"The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core."

	(Proudfit, col. 8, ll. 32-38.)
and having a modulus of from about 15,000 to about 70,000 psi;	The composition of the inner cover layer is described in Table 6. **TABLE 6** Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type / Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.) SURLYN 8940 and 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid. Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The '981 Patent discloses the preferable amount of **unsaturated carboxylic acid is "from about 5[%] to about 15% by weight**." ('981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the '981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.
an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,	"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1 .) "Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.) The composition of the inner cover layer is described in Table 6.

	TABLE 6 Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.)
the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,	"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft **outer layer** 14 of polymeric material." (Proudfit, col. 7, ll. 21-24.) "... an outer layer of soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclose in Table 7 reproduced below. TABLE 7 Composition of Outer Layer (Parts by Weight) Trans PolyIsoprene (TP-301) — 60.00 Polybutadiene — 40.00 Zinc Oxide — 5.00 Titanium DiOxide — 17.00 Ultramarine Blue color — .50 Zinc DiAcrylate — 35.00 Peroxide (Varox 230 XL) — 2.50 Total — 160.00 Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadience is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that **cover has a Shore D hardness of 52**. Thus, Proudfit's outer layer cover inherently has a Shore D hardness of less than 64.
said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	"A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. **The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]** during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as organic peroxide rather than using the conventional sulfur and

	RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls." (Proudfit, col. 5, ll. 17-27.)
and a Shore D hardness of 64 or less.	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) Also, see below.

As pointed out in the request on page 81 and 82:

... Proudfit teaches a golf ball having a two-piece [(sic three-piece)] cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer of a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the soft balata outer cover layer of Proudfit to include the soft polyurethane material taught by Wu. Wu teaches that: "The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit. It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and 'feel" of balata. (Wu at col. 1, lines 36-46.) As the inventor of the '130 patent had indicated in a 1994 publication, golf ball designers understood that the mechanical properties of the layers impacted the performance of the golf ball more than the materials themselves. (Exhibit G at 334.) Additionally, Wu's polyurethane material inherently has a flexural modulus of about 23,000 psi as measured in accordance with ASTM standards. (Decl. of Jeff Dalton at ¶ 7.) Proudfit's outer cover layer material has a flexural modulus of between about 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31 .) Thus, one of ordinary skill in the art would have appreciated that using Wu's polyurethane as Proudfit's outer cover layer would have provided similar playability characteristics as well as numerous advantages including, for example, durability.

Based on Wu's teachings, one of ordinary skill in the art would have recognized the substitutability of soft polyurethane for soft balata-based materials and the advantages of making such a substitution. These advantages include (1) low price compared to balata; (2) better cut resistance when compared to balata; and (3) a "click" and "feel" that is similar to balata. Moreover, the replacing the balata-material taught by Proudfit would have been obvious to those skilled in the art prior to November 9, 1995 because before that time, the Titleist Professional™ golf ball, which had used Wu's polyurethane

material, had replaced balata-covered balls as the market leader. (See Exhibit C; see also Decl. of Jeffery L. Dalton at ¶¶ 3-4.)

On page 82 the request concludes with: "Therefore, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with an outer cover layer made of soft polyurethane material because polyurethane provides numerous advantages over balata while exhibiting the "click" and "feel" of balata."

This rejection of claim 6 based on Proudfit in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

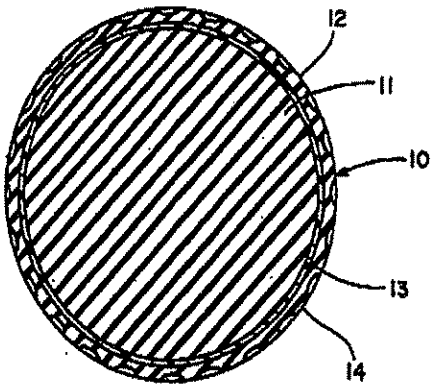
Proposed Third Party Requester Rejection: Ground #42.

The requester submits on pages 82-84 in the request that claim 5 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Molitor '751.

Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Molitor '751.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.

Claim 6	Proudfit
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)

<table>
<tr><td>a spherical core;</td><td> 

"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the same of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material. (col. 7, lines 21-24; FIGS 1, 2.) "Two specific solid core compositions used with the new two- layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)</td></tr>
<tr><td>an inner cover layer molded over said spherical core to form a spherical intermediate ball,</td><td>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)</td></tr>
<tr><td>said inner cover layer having a Shore D hardness of 60 or greater</td><td>The composition of the inner cover layer is described in Table 6.
TABLE 6
Composition of Inner Layer of Cover (Parts by Weight)
<table>
<tr><th>Ionomer Type</th><th>Blend Ratio</th></tr>
<tr><td>Sodium- Surlyn 8940</td><td>75%</td></tr>
<tr><td>Zinc- Surlyn 9910</td><td>25%</td></tr>
</table>
(Proudfit, col. 8, ll. 22-30.)

SURLYN 8940 has a Shore D hardness of 65; SURLYN 9910 has a Shore D hardness of 64, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60.</td></tr>
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	"The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (Proudfit, col. 8, ll. 32-38.)
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	"The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (Proudfit, col. 8, ll. 32-38.)
and having a modulus of from about 15,000 to about 70,000 psi;	The composition of the inner cover layer is described in Table 6. **TABLE 6** Composition of Inner Layer of Cover (Parts by Weight) Ionomer Type — Blend Ratio Sodium- Surlyn 8940 — 75% Zinc- Surlyn 9910 — 25% (Proudfit, col. 8, ll. 22-30.) SURLYN 8940 and 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid. Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The '981 Patent discloses the preferable amount of **unsaturated carboxylic acid is "from about 5[%] to about 15% by weight.**" ('981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the '981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.

<table>
<tr>
<td>an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,</td>
<td>"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1 .)

"Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.)

The composition of the inner cover layer is described in Table 6.

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</table>

(Proudfit, col. 8, ll. 22-30.)</td>
</tr>
<tr>
<td>the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,</td>
<td>"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24.)

"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclose in Table 7 reproduced below.

TABLE 7
Composition of Outer Layer (Parts by Weight)
<table>
<tr><td>Trans Polyisoprene (TP-301)</td><td>60.00</td></tr>
<tr><td>Polybutadiene</td><td>40.00</td></tr>
<tr><td>Zinc Oxide</td><td>5.00</td></tr>
<tr><td>Titanium DiOxide</td><td>17.00</td></tr>
<tr><td>Ultramarine Blue color</td><td>.50</td></tr>
<tr><td>Zinc DiAcrylate</td><td>35.00</td></tr>
<tr><td>Peroxide (Varox 230 XL)</td><td>2.50</td></tr>
<tr><td>Total</td><td>160.00</td></tr>
</table>

Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadience is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that cover has a Shore D hardness of 52. Thus, Proudfit's outer layer</td>
</tr>
</table>

	cover inherently has a Shore D hardness of less than 64.
said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	"A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. **The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]** during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as organic peroxide rather than using the conventional sulfur and RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls." (Proudfit, col. 5, ll. 17-27.)
and a Shore D hardness of 64 or less.	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) Also, see below.

As pointed out in the request on page 82-84:

...Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer for a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with the soft polyurethane outer cover layer taught by Molitor '751.

Molitor '751 teaches that: It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55. (Molitor '751, col. 2, lines 33-49.) In explaining what a "two-piece" golf ball is, the Molitor '751 patent explains that: The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and Other balls having non-wound cores. (Molitor '751, col. 2, lines 7-12.)

> Proudfit teaches a "two-piece" golf ball that fits within this definition. Molitor '751 explains that the advantages of using a cover layer including a soft polyurethane material on a two-piece golf ball, such as the golf ball of Proudfit, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two- piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)
>
> Molitor expresses the hardness of the cover material as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19 (Exhibit L.) A cover material having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

On pages 83-84 the request concludes: "Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the soft balata outer cover layer of Proudfit with the soft outer cover layer including a soft polyurethane material as taught by Molitor '751 to provide golf balls that have "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)"

This rejection of claim 6 based on Proudfit in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Correspondence

All correspondence relating to this *inter partes* reexamination proceeding should be directed as follows:

By **U.S. Postal Service Mail** to:

Mail Stop *Inter Partes* Reexam
ATTN: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to: (571) 273-9900
Central Reexamination Unit

By hand to: Customer Service Window
ATTN: Central Reexamination Unit
Randolph Building
401 Dulany St.
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

Michael O'Neill
CRU Examiner
AU 3993

CONF.